

Teaching Reading and Summarizing via Argument-focused Text Annotation

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BACKGROUND

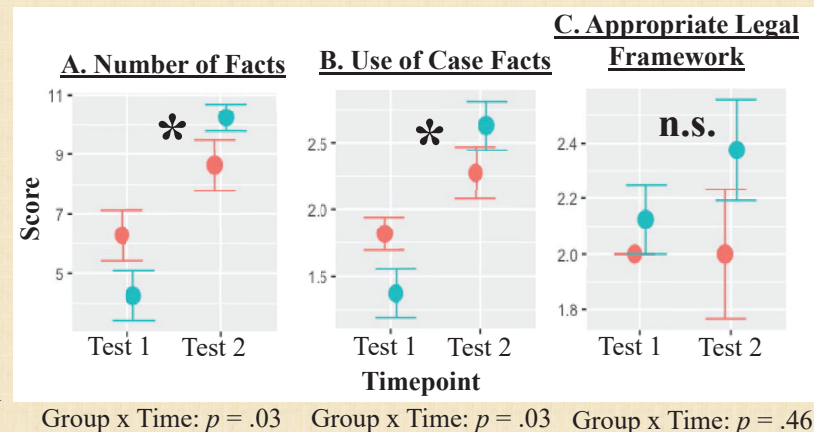
- One reading skill students often struggle with is summarizing.
 - **Summarization** is the ability to convey the most crucial information from a text in a concise and clear form (i.e., the gist of the material¹).
- The skill of summarization is critical in formal education because comprehension of complex texts is essential to many academic disciplines like science, humanities, and law².
- Annotation** (i.e., highlighting key terms and ideas) has been identified as one of multiple cognitive literacy strategies that can help students when they are looking at structure, examining ideas, extracting meaning, and communicating understandings³.
 - Annotation-based learning has proven to be beneficial: first-year college students in a randomized controlled trial did better on future comprehension exams when annotating narrative texts compared to those using a question-answer strategy⁴.
- Thus, it seems feasible that annotation could be a useful activity for law students, such as when understanding legal opinions.

Group

- Gloss First
- Gloss Second

Outcome variables were part of an authentic class assignment and were evaluated by the course instructor based on their rubric.

RESULTS



HYPOTHESIS & PROJECT GOAL

Hypothesis: Reading *and* annotating legal opinions, rather than only reading them, will improve students' understanding of factor-based legal frameworks.

Project Goal: Assess if annotation improves students' learning and, if so, to what extent.

PROCEDURE

- First-year law students in a legal writing class were randomly assigned to one of two conditions in a waitlisted control design.
- These students were evaluating and annotating court-stop cases.
- ½ of the students ($n = 11$) used Gloss early in the term, and ½ used Gloss later in the term ($n = 8$).
- The group not using Gloss studied the cases as usual.
- Thus, all the students used Gloss at some point during the term.

MATERIALS & METHODS ($N = 19$)

gloss	Annotator
Data	Text
Types 23 Annotations 11	Susicion Project 3.0 unitedstates_v_powell Done Map
Auto 0	
1A Furtive Movement	Sentence 8: Mr. Powell responded in the negative and then, without any prompting from the deputy began volunteering information. Label: Nervous Behavior or Appearance
1B Physical Appearance of Nervous...	Sentence 9: Mr. Powell told Deputy Trammel that he rented the Yukon to move from Colorado to Lexington, Kentucky, where he planned to open a hip-hop clothing store. Label: Unusual Travel Plans Unusual Vehicle Ownership
1C Nervous Behavior	Sentence 10: He explained that he was transporting tires for his Chevy Suburban, which he owned but left at home in Colorado, because the tires were not made for long distance highway driving. Label: Unusual Travel Plans
1D Suspicious or Inconsistent Answ...	Sentence 11: He added that he planned to untied the tires in Lexington before returning to Colorado to turn in his rental vehicle and pick up his Suburban. Label: Unusual Travel Plans
2E Motorist License or Identification	Sentence 12: Mr. Powell went on to say that he was traveling with his brother, who was "up ahead" because he did not wait for Mr. Powell when Mr. Powell stopped to use the restroom. Label: Unusual Travel Plans
2F Driver Status	Sentence 13: During Mr. Powell's narrative, Deputy Trammel observed that Mr. Powell appeared "extremely nervous" because, in addition to his talkativeness, he was breathing heavily and avoiding eye contact.
2G Legal Indications of Drug Use	
2G Refused Consent	
2I Motorist's Appearance Related to ...	
3J Possible Drug Route	

CONCLUSIONS & FUTURE DIRECTIONS

Number of Facts (Plot A):

- Overall, students do better on Test 2 compared to Test 1.
 - Students are indeed learning.
- We found a significant cross-over interaction where whichever group used Gloss most recently does better.
 - Gloss helps with learning, at least in the short-term.

Use of Case Facts (Plot B): similar trends as for Number of Facts (Plot A)

Appropriate Legal Framework (Plot C):

- We do NOT observe a benefit of Gloss.
 - This makes sense given that Gloss is focused on helping students identify specific facts within the case.
 - This reassures us that the learning benefits are indeed due to Gloss usage (as opposed to one group being smarter or more motivated than the other).

Future Directions^{5,6}:

- Assess whether including suggested GPT-4 annotations impacts students' learning and speed in the annotation task. We will prompt GPT-4 to provide suggested annotations, and students will assess if the labels are accurate.
- Explore whether student-annotated cases can be used as training data in natural language processing and machine learning tasks.